The Digital Quarry Project: Making Carnegie Quarry globally accessible through an interactive website

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Introduction

In 1915, Dinosaur National Monument was founded to preserve what has become one of the most astounding paleontological sites in the world, the Carnegie Quarry. With over 100 years of discoveries, excavations, and advancements in science, the quarry presents a unique challenge in the preservation and dissemination of this information. The Digital Quarry Project will advance the preservation of this rare resource by making it globally available in the form of an interactive website. The goal is to digitize not only the quarry wall in its present form, but incorporate the historical excavation maps and archives in order to present as complete a record as possible. The process involves locating and scanning the archives pertaining to the quarry, describing and cataloging them in an online database, and finally curating the content in order to present the material on the website. Although this is a multi-year endeavor, considerable progress has been made in the scanning and cataloging of archives as well as the creation of a demo website this summer.

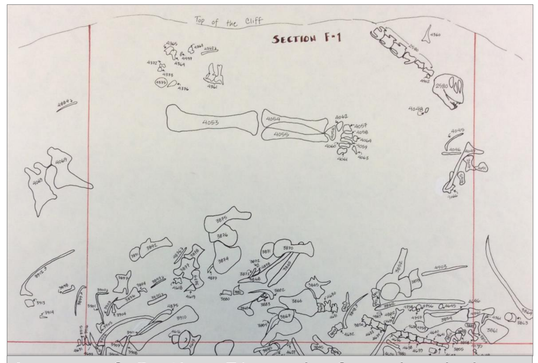
Methodology

The field/prep work, scanning and cataloging of archives, and the various components of website development are all separate but related processes.

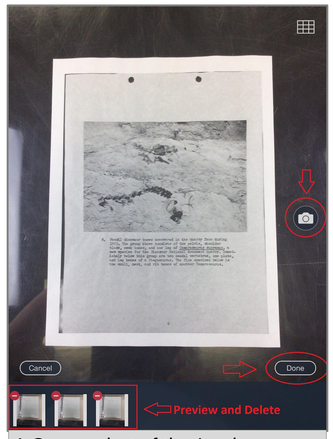
- Field and Prep work
  1. Photogrammetry: Photographs and measurements of specimens on the quarry wall are taken

  2. Research in the Paleontology library is made to find archives pertaining to the quarry's development and history
- Scanning and Cataloging
  1. Archives are scanned in various ways:
     - Flatbed scanner: for transparencies, slides, and film
     - Camera: for larger files that need a higher resolution such as maps and sketches
     - Ipad CamScanner App: for any document in the archives which is an original copy/ or a fragile copy. (including photographs)
  2. Scanned archives are described and cataloged using Google Drive and WordPress making each document easily accessible through a search feature.
- Website Development
  1. Digital quarry map with interactive features is being produced
  2. Articles on various topics pertaining to the quarry are being written
  3. Archives are being incorporated into the website plan
  4. A demo website compiling and exhibiting all of the information is being created

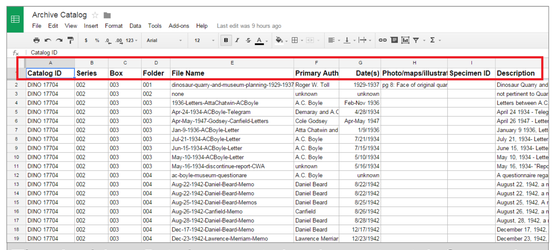
Accomplishments



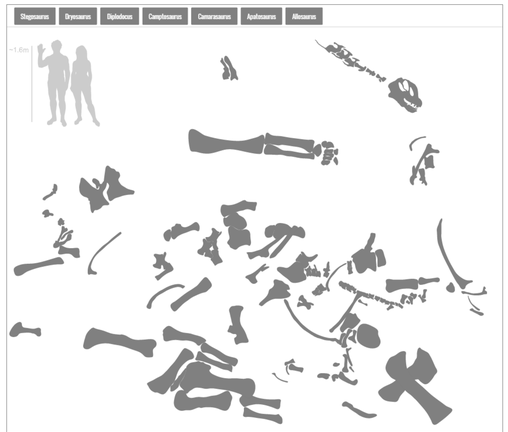
A map of Section F1 made from hand drawn sketches. This was found in the archives and used when trying to locate bones on the wall.



A Screenshot of the Ipad CamScanner App as viewed during the scanning process.



The Archive Catalog contains important information for each file that was scanned. This includes a detailed description, authors, location in the Paleo library, and dates.



The demo of the digital quarry is comprised of section F of the quarry wall. This interactive map highlights the bones based on species and presents data specific to each bone on the wall.

Topics such as Species and People from the quarry are displayed with citations to the archives, research papers, and material already found on the internet.

Discussion

The Digital Quarry Project was conceived as a means to better preserve and exhibit the many aspects of Carnegie Quarry. Through this project, a workflow process was created which expedited the archiving process without compromising the quality of the final product. The use of the CamScanner App was crucial in the digitizing of thousands of documents in the Paleontology library. These documents include memos, letters, sketches, maps, photographs, and reports which are essential in the retelling of the long and interesting history of Carnegie Quarry. Through these records, many fascinating stories, some of which were not heard of until now, were uncovered.

Photogrammetric methods such as LiDar have been previously implemented. The interactive digital quarry map incorporates photographs taken of the individual bones, data collected on each specimen, and Adobe Illustrator vector files. So far 128 specimens have been fully digitized out of the estimated 5,000.

Other features of the website are informative articles on the history, science, species, and people behind Carnegie Quarry. All of these aspects are connected to the digital library in one way or another.

Preliminary user testing provided positive feedback on the website concept and content from both researchers and interpretive staff. More user testing among a broader demographic will provide valuable information in making the website ideal for global use.

Future Developments

Although the project is well underway, much work is yet to be done in order to make this website a comprehensive source of information. Dinosaur National Monument holds an extensive amount of historical documents which have yet to be scanned and cataloged. As more material is found, the digital library will continue to grow. There are also other institutions which have been a part of the Carnegie Quarry. The inclusion of their records is a crucial aspect of the project. The final product will display a massive interactive map exhibiting the historic excavations and the present day quarry.

Once completed, Carnegiequarry.com will be an invaluable resource for researchers, educators, and the interested public around the world.

Acknowledgments

The Digital Quarry Project was devised by Park Paleontologist Dan Chure. It is a collaborative effort which involves volunteers with the National Park Service, Brigham Young University, the Geoscientists-in-the-Parks/GeoCorps America Program, and the Mosaics in Science Program.